

**Appalachian Mountains Joint Venture  
3-Year Operational Plan  
2015-2018**



APPALACHIAN  
MOUNTAINS  
JOINT VENTURE

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## Introduction

The Appalachian Mountains Joint Venture (AMJV) 2015-2018 Operational Plan established the priorities, tasks, and products of the AMJV for this three year period. This plan was developed by AMJV staff, AMJV Management Board, and Technical Committee partners. The priorities described in this plan are reflective of the overarching goals and priorities established in our AMJV Implementation Plan, which was finalized in 2008; the priorities, progress, and accomplishments from our previous 3-year Operational Plan; and the direction our JV partners feel is most appropriate for continuing to accomplish our AMJV Vision and Mission. This plan was approved by the AMJV Management Board in June 2015, and guides the priorities and tasks of the AMJV staff and partners through June 2018. The members of the AMJV Management Board agree with the priorities, tasks, and products contained within this Operational Plan and are committed to its implementation.

The expectations of a fully functioning Joint Venture are described in *Desired Characteristics for Habitat Joint Venture Partnerships* (i.e., the “JV Matrix”; Appendix A). These expectations are organized into the following seven themes:

- Organizational Performance
- Biological Planning
- Conservation Design
- Habitat Delivery
- Monitoring and Evaluation
- Assumption based Research
- Communication, Education and Outreach

The JV Matrix provides a valuable means of self-evaluating the effectiveness, strength, and growth of our partnership, and the priorities and tasks described in this plan are linked to one or more of these JV Matrix elements.

Over the 2015-2018 period, AMJV staff and partners will focus on the following priorities:

- 1) JV-wide Desired Landscape Condition Decision Support Tool
- 2) Improve Structure, Coordination, and Communication within AMJV Technical Committee
- 3) Habitat Conservation and Delivery
  - a) Mature Forest Habitats
  - b) Young forest/Early Successional Habitat (ESH) for Golden-winged Warbler, American Woodcock, and associated species
  - c) High Elevation Forests
  - d) Appalachian Forest Birds Communication Strategy
- 4) Increase investment and involvement in wintering ground and migratory stopover conservation work for AMJV priority species.
- 5) AMJV Organizational Performance
- 6) Communication/Education/Outreach

Each priority includes an associated set of tasks and products. At each meeting of the AMJV Management Board, the Board will review the progress made on each of the priorities and adjust the tasks and products if needed.

## Priority 1: JV-wide Desired Landscape Condition Decision Support Tool

A comprehensive landscape and habitat assessment is a major component within the Conservation Design section of the JV Matrix that is needed for setting appropriate habitat objectives and facilitating strategic habitat delivery. Relative to the JV Matrix, the technical expectations for comprehensive content of this component include a rigorous analysis of landscape/habitat carrying capacity based on explicit population-habitat models, and forecasting expected carrying capacity with and without partnership intervention, and predicting impacts of expected major changes (e.g., energy development, climate change).

This Decision Support Tool (DST) would be a Geographic Information System (GIS)-based tool that would incorporate a variety of data, including social factors (e.g. the social carrying capacity or acceptability of management in region), forecasted energy development (e.g. from the recently completed Appalachian Landscape Conservation Cooperative (AppLCC) Energy Development project), and climate change data. Ideally, this DST will be an interactive or scenario type tool that shows how a future landscape will look given different parameters (management, disturbance, etc.). Specific to climate and resilience, we anticipate incorporating existing data layers such as The Nature Conservancy's (TNC's) resiliency network as well as climate models that predict how temperature/precipitation patterns will change with climate change. We anticipate using a postdoctoral position to accomplish this work and/or subcontracting to an organization with the capabilities to complete the DST (e.g. Conservation Management Institute).

The following tasks describe existing and future steps for the AMJV to meet this comprehensive content. Note that tasks 2-5 are preliminary based on initial input from the AMJV Technical Committee and dependent on the Scope of Work (SOW) developed as part of task 1.

**Task 1:** With input from the AMJV Technical Committee and AMJV Management Board, develop a set of desired needs of the DST as well as a comprehensive scope of work and associated project proposal (including budget) that describes the completed end product and preliminary steps and benchmarks for completing the DST. The DST should be sustainable (i.e., easily updated and/or adapted to new technologies), or it should have an understood “shelf life”. This SOW and proposal would be used to solicit universities or other partners to complete the project.

- Product: Scope of Work and project proposal for completing the DST
- Deadline: December 2015
- Major Contributors: AMJV staff, AMJV Technical Committee, AMJV Management Board

**Task 2:** Inventory and compile forest assessments developed by partners and other organizations that delineate priority forests or changes to the landscape (e.g. energy development) – e.g., AppLCC Energy Development and Riparian Restoration Projects, TNC

Forest Block and Resiliency networks, Brook Trout priority watersheds, state natural heritage and endangered species programs, state wildlife action plans, state forest plans, etc.

- Product: Ensemble GIS layer of priority forest areas that shows where overlap (or divergence) exists among priorities of different organizations and partners w/in the AMJV
- Deadline: December 2015
- Major Contributors: Postdoc/University, AppLCC, TNC, (Eastern Brook Trout Joint Venture) EBTJV, Audubon, USFS Eastern Forest Environmental Threat Assessment Center (EFETAC), state natural heritage and endangered species programs, AMJV staff others as identified

**Task 3:** Inventory and compile relevant GIS layers that are necessary and provide relevant spatial information – e.g. National Land Cover Data (NLCD), elevation, protected land boundaries (federal, state, land trusts).

- Product: Ensemble GIS layer of relevant GIS layers necessary
- Deadline: December 2015
- Major Contributors: Postdoc/University, TNC, EBTJV, Audubon, AppLCC, State Natural Resource Agencies, AMJV staff, others as identified

**Task 4:** Complete JV-wide current forest assessment (hardwoods, mixed, high elevations, etc.) using (Forest Inventory and Analysis) FIA and landcover data (including grasslands, wetlands, etc.). Describe tree species and community distributions, forest structure, age class/seral stage distributions.

- Product: Summary report and associated maps describing the ‘state-of-the-forests’ within the JV, highlighting areas of high conservation value (e.g. exceptional forest structure with high diversity of tree species) and areas of need/concern (e.g. poor forest structure, prevalence of invasive species, etc.)
- Deadline: June 2016
- Major Contributors: Postdoc/University, USFS FIA, AMJV staff

**Task 5:** Compile the information from above tasks into a GIS-based DST to be used for landscape planning for numerous priority species (i.e., those for which we have the best information) following the SOW from Task 1 above, integrating the data layers listed above and existing bird-habitat models for priority species and related habitat suitability maps that allows partners to prioritize landscape-level conservation efforts for a suite of species and examine ‘trade-offs’ when managing habitats at different intensities and/or scales.

- Products: GIS-based DST that facilitates JV-wide conservation design and prioritization of habitat delivery for a select suite of priority species.
- Deadline: June 2018
- Major Contributors: Postdoc/Universities, AMJV staff, Technical Committee, and Management Board, AppLCC

## **Priority 2: Improve Structure, Coordination, and Communication within AMJV Technical Committee**

AMJV Partners and Staff have identified the need for a more formal structure to the AMJV Technical Committee. This structure would promote the comprehensive content for Technical Committees described in the Joint Venture Matrix, which includes committees for specific science needs with full participation from partner organizations. The proposed structure includes the development of an executive/coordinating team whose members would also chair the various working groups. Each working group would develop semi-annual reports for the AMJV Board on progress made in each of the working groups. Involving active partners in a Coordinating Team should improve partner engagement and ownership. In addition, partners have requested assistance in establishing additional regional-level working groups that are similar to the Southern Golden-winged Warbler Group that can support and enhance the work of regional partnership with similar goals. Partners have also requested increasing communication about ongoing research, new findings, monitoring efforts, etc. that highlight AMJV goals and objectives. This will foster collaboration, increase information sharing and allow partners to get a better idea of what is taking place across the AMJV landscape.

**Task 1:** Develop more formal structure to the Technical Committee, including an executive/coordinating body (7-10 members), whose duties may include chairing specific working groups focusing on topics such as Coordinated Monitoring, Landscape Assessment, High Elevation Forests, and Legacy Surface Mines.

- Product #1: Formal document defining structure, expectations and roles within the Technical Committee, including connections between AMJV Management Board and Technical Committee.
- Product #2: Annual addendum to document defining scope and roles for each active Working Group, and why each is needed
- Deadline: Nov 2015 for both products; annual review of Product #2 at Fall Management Board Meetings
- Major Contributors: AMJV Science Coordinator and Technical Committee

**Task 2:** Assist with coordination and establishment of regional-level groups, similar to Southern Golden-winged Warbler Group

- Product: Identify partners interested in development of regional-level groups and which species/habitats they would like to focus on, and help coordinate meetings
- Deadline: Ongoing
- Major Contributors: AMJV Staff, Technical Committee

**Task 3:** Develop and host 2-4 webinars annually on new findings, data needs and availability, monitoring efforts, etc. Put together and distribute a quarterly communication digest that chronicles new publications, activities of working groups, other information and resources that partners want to highlight that pertain to AMJV goals and objectives.

- Product: Webinars that will enhance AMJV partner communication and ideas for collaboration in science endeavors or habitat delivery
- Deadline: 2-4 webinars annually, beginning Spring 2015
- Major Contributors: AMJV Communications Specialist, AMJV Science Coordinator, and AMJV Technical Committee

**Task 4:** Engage universities and other research partners working on topics of interest to the AMJV in a more coordinated way. Focus initially on increasing the Social Science capacity within the AMJV and identifying social science priorities of the partnership.

- Product #1: Develop a science/research Working Group, or determine best way to engage with partners conducting research on priority birds/habitats within the AMJV landscape
  - Deadline: Initiate Working Group November 2015, ongoing thereafter
  - Major Contributors: AMJV Staff, AMJV Technical Committee, universities & affiliates
- Product #2: Formal assessment of the social science capacity within the JV (e.g. university natural resource programs w/ active human dimensions or social science programs/faculty) and identification of top 5 social science needs/questions partners feel are most relevant to the AMJV (i.e. needs that could be presented to the Management Board as potential research projects).
  - Deadline: November 2016
  - Major Contributors: AMJV Science/research Working Group (from Product #1 above), AMJV Technical Committee, universities & affiliates

### **Priority 3: Habitat Conservation and Delivery**

Establishing an effective habitat delivery network that can efficiently execute conservation design strategies that address the needs of priority species is a key element of our JV partnership. Relative to the JV Matrix, the technical expectations for comprehensive content of this component include providing a structure and process that generates, attracts, leverages, and implements habitat conservation actions in support of JV-established biological targets. For the scope of this Operational Plan, the AMJV habitat delivery priorities are subdivided across three priority habitat types, with a fourth priority dedicated to developing a communications strategy what will facilitate support for and implementation of habitat conservation across the AMJV.

#### **Priority 3(a): Mature Forest Habitats**

AMJV Partners have identified maintaining and enhancing mature forest habitat quality as a high priority. The connectivity, structure, and condition of mature forests have changed drastically over the last century, with an overwhelming tendency towards increasingly fragmented, homogenous, closed-canopy forest blocks. A number of mature forest obligates, such as Cerulean Warbler (CERW), Wood Thrush (WOTH), Canada Warbler (CAWA), and Worm-eating Warbler (WEWA), are declining throughout the Appalachians and have been identified as



high priority species by AMJV partners. The habitat needs of these and other species vary considerably, necessitating a comprehensive approach to forest conservation that includes a range of strategies, including protection and preservation, restoration, and active management, that do not represent multiple single-species approaches, but rather a comprehensive forest ecosystem approach that uses birds as surrogates to forest health. The following tasks describe our partnership's efforts relative to these conservation needs over the next three years.

**Task 1:** Working with the Technical Committee, identify a suite for priority forest species that can serve as indicators or surrogates of the suite of forest habitats in the Appalachians.

- Product: Identified suite of priority species and their associated habitats, including specific habitat structure and forest health components, and conservation strategies for those habitats
- Deadline: November 2016
- Major Contributors: AMJV staff, Technical Committee, Management Board

**Task 2:** Work with Fire Learning Network (FLN) to quantify and assess the contributions being made by the Central Appalachians FLN and Southern Blue Ridge FLN to enhance habitat for priority birds. NOTE: This task, as well as Task 3 below, also apply to Priority 3(b).

- Product: Summary of acres treated each year and bird response information where available
- Deadline: Continuous
- Major Contributors: TNC and FLNs

**Task 3:** Assess current involvement by AMJV staff and partners in the FLN. Identify and prioritize opportunities to strengthen existing AMJV partner involvement in the FLN and develop new partnerships in key regions (e.g., southern Appalachians).

- Product: Completed assessment and summary strategy with prioritized opportunities
- Deadline: November 2017
- Major Contributors: FLN, AMJV Staff and Technical Committee

**Task 4:** Working with the International Wood Thrush Conservation Alliance (IWOTHCA), produce a set of forest conservation BMPs for Wood Thrush and associated species.

- Product: Document describing the characteristics of high quality WOTH breeding ground habitat (nesting through post-fledging) and best management practices for creating and maintaining that habitat in the landscape.
- Deadline: December 2017
- Major Contributors: IWOTHCA, AMJV Technical Committee

#### CERULEAN WARBLER SPECIFIC TASKS

With the development of the *Cerulean Warbler Management Guidelines for Enhancing Breeding Habitat in Appalachian Hardwood Forests* and Cerulean Warbler Appalachian Forest Enhancement Project as part of the (Natural Resource Conservation Service) NRCS Regional Conservation Partners Program (RCPP), much of our focus over the next three years with respect to Cerulean Warbler will be enhancing and expanding the existing habitat delivery network that

exists throughout the AMJV to implement the RCPP and enhance forest habitat for Cerulean Warblers.

**Cerulean Task 1:** Revise and update the current *Cerulean Warbler Management Guidelines for Enhancing Breeding Habitat in Appalachian Hardwood Forests*, incorporating results from the current Cerulean Warbler Silvicultural Project in WV, PA, KY, VA.

- Product #1: Completion of Cerulean Warbler Silvicultural Project.
  - Deadline: June 2017
  - Major Contributors: West Virginia University, VA Tech, Indiana University of PA, WV Division of Natural Resources, KY Dept. of Fish and Wildlife Resources, VA Dept. of Game and Inland Fisheries, PA Game Commission, AMJV Staff
- Product #2: Completion of Revised and expanded Cerulean Warbler Forest Management Guidelines
  - Deadline: December 2017
  - Major Contributors: West Virginia University, VA Tech, Indiana University of PA, AMJV Staff, Board, Technical Committee, Cerulean Warbler Technical Group

**Cerulean Task 2:** For each Cerulean Warbler focal area, develop population and associated habitat objectives and identify key conservation strategies to help achieve habitat objectives for each focal area (e.g., management, restoration, protection). Population and habitat objectives would be a component, at least in part, of the decision support tool described in Priority 1.

- Product: Cerulean Warbler focal area population and habitat objectives
- Deadline: Draft for spring 2016 Management Board meeting; final by fall 2016 Management Board meeting
- Major Contributors: AMJV Science Coordinator and Technical Committee, Cerulean Warbler Technical Group

**Cerulean Task 3:** Coordinate and implement the Cerulean Warbler Appalachian Forest Enhancement Project as part of the NRCS Regional Conservation Partners Program (RCPP). Enhance mature forest habitat following the Cerulean Warbler Forest Management Guidelines on private forest lands in WV, PA, and MD as outlined for the project.

- Product #1: Organize/provide 5 training workshops across the project area for landowners and agencies to discuss habitat objectives, Cerulean Warbler Forest Management Guidelines, and the Cerulean Warbler Appalachian Forest Enhancement Project.
  - Deadline: December 2015
  - Major Contributors: AMJV Staff, American Bird Conservancy, Indiana University of PA, (National Wild Turkey Federation (NWTf)), National Fish and Wildlife Foundation (NFWF), PA Game Commission, PA Bureau of Forestry, WV Division of Forestry, WV Division of Natural Resources, MD

Dept. of Natural Resources (Forest Service, Wildlife and Heritage Service),  
USFS

- Product #2: Enroll 12,500 acres of forest habitat on private lands within Cerulean Warbler focal areas in WV, PA, and MD into Environmental Quality Incentive Program (EQIP) contracts. Lands enrolled should have a relatively low abundance of Cerulean Warblers (<5 territories/25 acres)
  - Deadline: June 2018
  - Major Contributors: NRCS, American Bird Conservancy, AMJV Coordinator, National Wild Turkey Federation, PA Game Commission, WV Division of Forestry, MD Dept. of Natural Resources Forest Service, Indiana University of PA, USFS State and Private Forestry,
- Product #3: Enroll 1,000 acres of legacy surface mines on private lands within Cerulean Warbler focal areas in KY, OH, PA, MD, and WV into EQIP contracts for reforestation
  - Deadline: June 2018
  - Major Contributors: The American Chestnut Foundation; Green Forests Work; Appalachian Regional Reforestation Initiative; Office of Surface Mining, Reclamation, and Enforcement; NRCS; University of KY; KY Dept. of Agriculture; AMJV Coordinator; American Bird Conservancy
- Product #4: Enroll 2,000 acres of private forest land in PA into easements as part of The Nature Conservancy's Working Woodlands Easement Program
  - Deadline: June 2018
  - Major Contributors: The Nature Conservancy (PA office); PA Game Commission

**Cerulean Task 4:** Establish a monitoring framework for CERW to track their response to habitat manipulations from the RCPP on private land. Information will be used to assess a population response as well as evaluate effectiveness of NRCS practices in creating CERW habitat and adapt accordingly.

- Product: A monitoring plan and associated capacity to implement the plan.
- Deadline: Plan and needed capacity established by late winter 2016, begin implementation in spring 2016
- Major Contributors: WVU, IUP, VA Tech, AMJV staff and Technical Committee, American Bird Conservancy, NWTF, The American Chestnut Foundation, Greed Forests Work

**Cerulean Task 5:** AMJV partners enhance mature forest habitat following the CERW Forest Management Guidelines within CERW focal areas where abundance of Cerulean Warblers is relatively low (<5 territories/25 acres) to help achieve stated population and habitat objectives (Task 2 above). Where Cerulean Warbler abundance is relatively high (>5 territories/25 acres), partners protect areas of mature forest and old growth, or expand protected areas to retain mature forest habitat. AMJV partners work with other

agencies/organizations in their state/region (e.g., WV DNR w/ WV DOF) to document acres managed/protected to benefit CERW and associated species.

- Product: at least 5,000 acres/year of forest habitat enhanced or protected within Cerulean Warbler focal areas
- Deadline: Annual
- Major Contributors: AMJV Management Board and Technical Committee members.

### **Priority 3(b): Young forest/Early Successional Habitat (ESH) for Golden-winged Warbler, American Woodcock, and associated species**

AMJV Partners have identified young forests and other ESH as a high priority. The abundance, distribution, and quality of young forest/ESH has changed drastically over the last century, with a dramatic shift towards large blocks of maturing forests with relatively limited and poor quality ESH present across the landscape. A number of young forest/ESH obligates, such as Golden-winged Warbler (GWWA), Blue-winged Warbler (BWWA), Prairie Warbler (PRAW), Field Sparrow (FISP), and American Woodcock (AMWO) are declining throughout the Appalachians and have been identified as high priority species by AMJV partners. The habitat needs of these and other species vary considerably, necessitating a comprehensive approach to young forest/ESH conservation that includes a range of strategies, including active management, restoration, and protection, that do not represent multiple single-species approaches, but rather a comprehensive approach that uses birds as surrogates to the health and quantity of this habitat in the landscape. The following tasks describe our partnership's efforts relative to these conservation needs over the next three years.

**Task 1:** Working with the Technical Committee, identify a suite of priority species that can serve as indicators or surrogates for the range of early successional habitats across the Appalachians.

- Product: Identified suite of priority species and their associated habitat, including specific habitat structure, and conservation strategies for those habitats
- Deadline: November 2016
- Major Contributors: AMJV staff, Technical Committee, Management Board

**Note:** Priority 3(a) Tasks 2 and 3 also apply here.

#### **GOLDEN-WINGED WARBLER SPECIFIC TASKS**

Over the past three years (2012-2015), the greatest emphasis has been placed on Golden-winged Warbler (GWWA) populations. The development of the NRCS Working Lands For Wildlife initiative for private landowners in FY 2012 that includes GWWA as a focal species provided AMJV partners the opportunity to engage private landowners and enhance ESH on private lands. AMJV partners have developed an effective habitat delivery network in some regions for implementing WLFW. AMJV staff and partners will continue to work with NRCS to effectively and efficiently implement WLFW over the next three years, assisting NRCS meet both habitat delivery and science capacity needs, especially in regions with lower than expected private

landowner enrollment to date. AMJV partners also will enhance ESH habitat on public lands. For GWWA, our habitat objective is to create or restore (i.e., a net gain) at least 3,000 acres per year (combined total on public and private lands) through 2050, dispersing those acres throughout GWWA focal areas (following the 2012 GWWA Conservation Plan) and then maintaining that level of high quality habitat throughout the focal areas in perpetuity.

**Golden-winged Task 1:** Coordinate with NRCS to implement the Golden-winged Warbler Working Lands For Wildlife initiative (GWWA WLFW).

- Product #1: Develop a single “master agreement” with one organization for administering the majority of WLFW partner technical assistance funds.
  - Deadline: December 2016
  - Major Contributors: NRCS, NFWF, AMJV staff
  
- Product #2: Assessment of current habitat delivery capacity for WLFW (in conjunction with CERW RCPP) and reorganization of capacity on the ground to maximize landowner enrollment and habitat delivery, especially in areas w/ low enrollment to date where appropriate opportunities exist.
  - Deadline: December 2016
  - Major Contributors: NRCS, Indiana Univ. of PA, American Bird Conservancy, National Wild Turkey Federation, PA Game Commission, NC Audubon, Pheasants Forever, VA Dept. of Game and Inland Fisheries, AMJV Staff
  
- Product #3: At least 3,000 acres/year (in combination with the acres in Task 3 below) of private land enhanced within GWWA focal areas throughout the region as part of NRCS GWWA WLFW
  - Deadline: Annual
  - Major Contributors: NRCS, Indiana Univ. of PA, American Bird Conservancy, National Wild Turkey Federation, PA Game Commission, NC Audubon, Pheasants Forever, VA Dept. of Game and Inland Fisheries, AMJV Staff

**Golden-winged Task 2:** Maintain the monitoring framework established for GWWA by AMJV partners (Indiana Univ. of PA has lead) through the NRCS Conservation Effects Assessment Program (CEAP) to track GWWA response to habitat manipulations from WLFW on private land. Information will be used to assess a population response as well as evaluate effectiveness of NRCS practices in creating WLFW habitat and adapt practices and habitat/population goals accordingly.

- Product: Continuation of GWWA WLFW monitoring via CEAP, with enough capacity to monitor all WLFW acres implemented on private lands across the AMJV.
- Deadline: Continuous
- Major Contributors: Indiana Univ. of PA, American Bird Conservancy, NRCS, NC Audubon, WVU, Univ. of TN

**Golden-winged Task 3:** AMJV partners will create, enhance, or protect young forest/ESH following all GWWA BMPs (e.g., grazing, ROW, mineland reforestation, etc.) within GWWA focal areas to help achieve stated population and habitat objectives (Task 2 above). AMJV partners work with other agencies/organizations in their state/region (e.g., WV DNR w/ WV DOF) to document acres enhanced following the GWWA BMPs or that otherwise provide habitat.

- Product: at least 3,000 acres/year (in combination with the acres in Task 1 above) of young forest/ESH enhanced or protected within GWWA focal areas
- Deadline: Annual
- Major Contributors: AMJV Management Board and Technical Committee members.

### **Priority 3(c): High Elevation Forests**

Although high elevation spruce-fir-northern hardwoods forests cover a relatively minor portion of the AMJV, partners have identified these forests as a priority issue for several reasons: high elevations are under-represented in avian monitoring programs (i.e., and therefore, some species may be of higher conservation concern than currently perceived); current forest conditions/extent are poor/reduced compared to historical baseline; they are exposed to a broad array of threats; high elevation forests and embedded grassy balds are critically important as migratory stopovers; and these systems possibly support a few endemic species (or sub-species). Several AMJV partners play very active roles on two restoration networks, the Central Appalachian Spruce Restoration Initiative (CASRI) and the Southern Appalachian Spruce Restoration Initiative (SASRI), which facilitates consideration of AMJV priorities into these initiatives. AMJV staff assist with the coordination of both initiatives across the region as needed. Our objectives for 2015-2018 are for AMJV staff to continue assisting with coordination and capacity of these initiatives at the high level as needed while partners continue to play the primary roles in coordinating and implementing spruce/fir restoration and interfacing w/ the AMJV through the High Elevation Forests Subcommittee of our Technical Committee.

**Task 1:** Continue assisting with coordination and capacity needs for restoring/managing high elevation forest habitat to enhance high elevation systems and associated bird communities.

- Product: Formal participation by staff in the administration of CASRI/SASRI
- Deadline: Continual
- Major Contributors: CASRI, SASRI, AMJV staff

**Task 2:** High Elevation Forests Subcommittee finalizes membership and develops a strategy for (a) most effectively engaging SASRI and CASRI and (b) including boreal or northern conifer forests in other areas of the JV (primarily PA and NY).

- Product: Formalized Subcommittee and initial strategy for engagement w/ CASRI/SASRI restoration efforts.
- Deadline: June 2016



- Major Contributors: AMJV Technical Committee, CASRI, SASRI

### **Priority 3(d): Appalachian Forest Birds Communication Strategy**

Develop an Appalachian Forest Birds Communications Strategy that stresses integration of different forest management practices (silvicultural, prescribed fire, etc.) with avian habitat management. During the NE/SE Partners in Flight conference in October 2014, many AMJV partners identified a critical need to develop an Appalachian forests communication strategy, especially given the current state of Appalachian forests and the variety of active management activities needed or underway to enhance habitat for a variety of priority bird species. This strategy would be a long-term umbrella strategy that outlines communications priorities and products for advancing and promoting the need for and benefits of achieving a dynamic forest landscape in the Appalachians through both active forest management and restoration/protection efforts to a variety of audiences (both professional and public). Note that tasks 3-5 are preliminary and dependent on the Scope of Work developed as part of task 2 below.

**Task 1:** Form a Communications Subcommittee comprised of AMJV staff, Management Board, and Technical Committee members or members of their organizations to lead the coordination and development of the strategy.

- Product: Formalized Communications Subcommittee
- Deadline: December 2015
- Major Contributors: AMJV staff (Communications Specialist), AMJV Management Board and Technical Committee

**Task 2:** Develop a comprehensive scope of work and associated project proposal (including budget) for developing the communications strategy and explore the opportunity to subcontract for completing the strategy.

- Product: Scope of Work and project proposal for completing the communications strategy
- Deadline: May 2016
- Major Contributors: AMJV Communications Subcommittee

**Task 3:** Inventory existing communications and outreach efforts and products within the AMJV region that promote the use of active management for improving habitat for birds where needed and protection where habitat already exists. Interview or work with key participants of these existing efforts. This strategy would incorporate and build upon smaller scale and existing communications efforts and products (e.g. WMI Young Forest Initiative, Ohio Bird Conservation Initiative training workshops, RCPP workshops)

- Product: Summary of existing communications and outreach efforts, identifying opportunities to unify products and efforts
- Deadline: December 2016

- Major Contributors: Communications strategy subcontractee, AMJV Communications Subcommittee

**Task 4:** Inventory existing communications and outreach efforts and products outside the AMJV region that promote the use of active management for improving habitat for birds or protection efforts for existing habitat that may be readily adapted for use in this strategy (e.g. Vermont Forest Bird Initiative). Interview or work with key participants of these existing efforts.

- Product: Summary of existing communications and outreach efforts outside the AMJV, identifying opportunities to adapt existing products and efforts to AMJV needs
- Deadline: December 2016
- Major Contributors: Communications strategy subcontractee, AMJV Communications Subcommittee

**Task 5:** Complete an Appalachian Forests Communications Strategy that integrates existing outreach and communications efforts currently underway by partners and targets both professional and public audiences across the JV.

- Product: Completed Eastern Forest Communications Strategy
- Deadline: June 2018
- Major Contributors: Communications strategy subcontractee, AMJV Communications Subcommittee

**Task 6:** As a component and initial tool developed as part of the Strategy in Task 5, prioritize development of an Eastern Forest Birds Foresters Toolkit similar to that produced by Audubon Vermont (see <http://vt.audubon.org/foresters-birds> for information). Adapt the information and silviculture recommendations to AMJV regions (e.g. one for northern section of AMJV, central AMJV, southern AMJV) and include recommendations for identification, preservation, and extension of existing high-quality habitats.

- Product: Completed foresters toolkit for the AMJV
- Deadline: June 2018
- Major Contributors: Communications strategy subcontractee, AMJV Communications Subcommittee, AMJV Board and Technical Committee

#### **Priority 4: Increase investment and involvement in wintering ground and migratory stopover conservation work for AMJV priority species.**

Conserving our migratory bird species requires a close examination of their ecology, including threats they face throughout their life cycle. We know that the majority of Neotropical migrants that breed in the AMJV actually spend a greater percentage of each year outside the Appalachian Mountains. Many species are experiencing increasing threats and habitat loss on their wintering grounds and during migration, justifying our increased participation in researching and



ameliorating those threats outside the AMJV boundary. There is a strong need to strengthen existing international partnerships (e.g., Pronatura Sur) as well as develop new partnerships as technology advances to target where birds born in the AMJV spend the winter.

Increasing collaboration in species-specific international working groups, Partners in Flight (PIF) Conservation Business Plans (CBP), and advancing our knowledge of connectivity patterns will support the recovery of our declining bird populations. AMJV staff and partners have also been involved in completing a comprehensive Breeding Grounds Plan for Eastern Forests. Much of the initial work for the CBPs focused on conservation strategies on the wintering grounds; however the plans are meant to be full life-cycle. An initial discussion of conservation strategies and research needs on the breeding grounds occurred at the joint NE/SE PIF meeting in VA Beach in Oct 2014, and will likely be rolled into a comprehensive document to include both breeding and wintering grounds project needs. This continued work will insure that the CBP priorities align with the JV priorities.

While wintering ground and migratory stopover conservation are not mentioned explicitly in any of the elements of the Joint Venture Matrix, engagement in this work is necessary for successful conservation of many of the AMJV priority species and could be considered part of the comprehensive content requirements for Biological Planning, Conservation Design, and Habitat Delivery.

**Task 1:** Assess current involvement by AMJV staff and partners in wintering and stopover conservation partnerships. Identify and prioritize opportunities to strengthen existing international partnerships and develop new partnerships in key wintering grounds for priority birds (e.g., Colombia, Nicaragua).

- Product: Completed assessment and summary strategy with prioritized opportunities
- Deadline: November 2017
- Major Contributors: AMJV Staff, Technical Committee, PIF, USGS

**Task 2:** AMJV Staff and partners continue to participate in species-specific international workings groups (e.g., Cerulean Warbler Technical Group, Golden-winged Warbler Alliance, International Wood Thrush Conservation Alliance, Canada Warbler International Conservation Alliance), including supporting meetings and research on breeding and wintering grounds

- Product: Participation in international working groups for CERW, GWWA, Wood Thrush (WOTH) & Canada Warbler (CAWA)
- Deadline: Ongoing
- Major Contributors: AMJV Staff, Steering Committee, Technical Committee

**Task 3:** Participate in development and implementation of PIF Bird Conservation Business Plans (CBP), particularly the Andean Highlands and Caribbean Plans.

- Product #1: Help develop PIF Bird CBP for Highlands (GWWA, CERW, CAWA) and Caribbean (Louisiana Waterthrush, Swainson’s Warbler, Prairie Warbler, Bicknell’s Thrush) species
- Product #2: Help develop Breeding Ground specific portion of CBP for eastern forests of North America, including ways to increase knowledge of connectivity
- Deadline: Final Plans by 2016 for Product #1; Final Plan by 2017 for Product #2. Deadlines are tentative and dependent on the timeline of other contributors listed below.
- Major Contributors: PIF, ABC, USFWS, state partners, NC Audubon, AMJV Staff, AMJV Technical Committee

## Priority 5: AMJV Organizational Performance

Joint Venture coordination, administration, and organizational performance are important elements of creating a successful and long-standing partnership. Comprehensive content described for this element in the Joint Venture Matrix includes (1) the Joint Venture Office and Management Board actively seeking to broaden the external partnership with relevant individuals and organizations; (2) JV maintains strong professional contacts and connections, networking to keep the JV abreast of current conservation issues, techniques, etc.; (3) Joint Venture Office identifies partner capabilities and works with partners to address any missing capabilities through additional staff, partners, contracts or training; and (4) one or more Management Board members regularly participate in the Association of Joint Venture Management Boards (AJVMB) and contribute to the health and vitality of that organization. Each of these characteristics can be achieved by Joint Venture staff and partners taking an active role in strengthening existing relationships, fostering new relationships, and promoting AMJV priorities at local, regional, and national levels. The following tasks describe existing and future steps for the AMJV to meet this comprehensive content.

**Task 1:** The AMJV Management Board fully represents the Federal, State, and Non-government bird conservation stakeholders within the AMJV and each Board organization is an actively engaged partner.

- Product: All Management Board seats are filled by actively engaged representatives
- Deadline: June 2016
- Major Contributors: AMJV Management Board, AMJV Staff

**Task 2:** Management Board members have a clear appreciation of their organization’s contribution to and role in the AMJV, as well as an understanding of the contributions and individual priorities of each partner organization.

- Product #1: Management Board portfolio describing each partner organization, their role within and expectations of the AMJV, and their relevant organizational priorities
  - Deadline: November 2015, updated annually
  - Major Contributors: AMJV Management Board, AMJV Staff

- Product #2: Partner highlights provided during each Management Board meeting, including an extended presentation (approx. 15 minutes) by one partner that highlights their work.
  - Deadline: Initiate at November 2015 Management Board meeting, occurs at each meeting afterwards
  - Major Contributors: AMJV Management Board

**Task 3:** The AMJV continues to actively participate in the Association of Joint Venture Management Boards and Joint Venture Hill Visits.

- Product #1: At least one Management Board member consistently participating in the AJVMB
  - Deadline: Biannual (AJVMB meetings coincide w/ AFWA and JV Hill Visits)
  - Major Contributors: AMJV Management Board
- Product #2: Multiple JV partners engage their respective Congressional delegation locally and attend the JV Hill Visits to promote and activities and accomplishments of the AMJV to Congressional and Agency leadership.
  - Deadline: Ongoing
  - Major Contributors: AMJV Board, Technical Committee, and Staff
- Product #3: At least one tour per year of AMJV work by Congressional delegation and/or Office of Management and Budget Examiner
  - Deadline: Initiate 2015, ongoing annually
  - Major Contributors: AMJV Board, Technical Committee, and Staff

**Task 4:** The AMJV is actively engaged in both regional and broader conservation partnerships, such as Partners in Flight (PIF; including NEPIF and SEPIF), the North American Bird Conservation Initiative (NABCI), Tri-Initiative Science Team (TriST), AppLCC, etc., AMJV partners understand the contribution of these partnerships to AMJV priorities, and relevant information from these partnerships is shared throughout the AMJV partnership as needed.

- Product #1: AMJV staff and partners continue participation in other bird conservation partnerships
  - Deadline: Ongoing
  - Major Contributors: AMJV Staff, AMJV Management Board, AMJV Technical Committee
- Product #2: Evaluate the effectiveness of existing communications tools for distributing information from these partnerships to AMJV partners and develop new tools and processes if necessary to facilitate information sharing.
  - Deadline: Ongoing
  - Major Contributors: AMJV Staff, AMJV Management Board, AMJV Technical Committee

## Priority 6: Communications/Education/Outreach

Many of our AMJV Communications priorities and products are guided by the 5-year Communications Plan that was completed in November 2012. This plan is guided by information from biological planning, conservation design, habitat delivery, monitoring and research to target communications geographically, programmatically, and to the highest priority conservation needs. Using this plan, our partnership has begun to develop effective communication, education, and outreach products and strategies to attract, engage and inform partners, raise awareness, change attitudes, and change behaviors among JV priority audiences to support bird habitat conservation. This has enabled our partnership to begin to meet the requirements described for comprehensive content for communications, education, and outreach in the Joint Venture Matrix. The tasks below, as well as priority specific communication task elsewhere in this document, describe existing and future steps for the AMJV to continue to advance our overarching communications priorities and continue to meet the requirements for comprehensive content.

**Task 1:** Maintaining/updating/redesigning website. Continue to maintain website as the information hub for the regional partnership. This includes posting AMJV-centric products like news announcements, newsletter, fact sheets, and annual highlights, updating news and information from partner organizations, and posting other information that would be valuable to the partnership. Also, it may be essential to slightly redesign and reorganize the website (architecture and functionality) in order to integrate new web technologies, communication products, and keep up with the times.

- Product: Completed but continuously updated.
- Deadline: Ongoing
- Major Contributors: PSU, AMJV Communications Specialist, AMJV Staff, Management Board, Technical Committee

**Task 2:** Develop outreach/education materials around AMJV initiatives and working groups. Provide communication support to increase coordination within the regional partnership. Examples can include newsletters, state fact sheets, informational materials regarding implementation of the RCPP award and outreach to private landowners, and educational materials on AMJV-supported work groups like the International Wood Thrush Conservation Alliance.

- Products: TBD for each topic, based on need and timeliness
- Deadline: Newsletters (quarterly), Year in Review (yearly) fact sheets and other informational materials (on need basis)
- Major Contributors: AMJV Communications Specialist, Staff and Partners

**Task 3:** Outreach to key congressional audiences. Develop and update materials to be used during Hill visits and field trips with Congressional staff and other stakeholders to ensure they are aware and value the AMJV partnership and understand its activities. Coordinate/assist with

communications and outreach efforts during JV Capitol Hill visits and field visits with congressional audiences and other stakeholders at habitat management sites.

- Product #1: State fact sheets and congressional letters
- Product #2: Informational materials for site field trips
- Deadline: December 2015 for all state fact sheets, informational materials for site field trips based on as needed basis
- Major Contributors: AMJV Staff and Partners (to help provide connections)

**Task 4:** Work at JV national level to develop materials and support work of the JV Communication, Education, and Outreach Team. This team allows JVs to work together on communications, education, and outreach issues at a national level as well as creates a network among those in the field to collaborate and provide input, feedback, and suggestions on each other's work. Past materials include national website, JV-staff survey, fact sheets, webinars, videos, etc.

- Product: New products are decided on each year at annual communication meeting and developed throughout the year
- Deadline: Ongoing
- Major Contributors: AMJV Communication Specialist

**Appendix A: Desired Characteristics for Habitat Joint Venture Partnerships**

**Desired Characteristics for Joint Venture Partnerships**

Element	Coordination/Partnerships		Sub-Element or Product	Technical Expectations	
	Minimal Content	Comprehensive Content		Minimal Content	Comprehensive Content
				Expected characteristics and level of performance for newly established and/or minimally-funded JVs (<\$300K)	JV Partnership should move toward this content as a Joint Venture matures. Increases in FWS funding are contingent on demonstrated progress toward these characteristics
<b>Organizational Performance</b>	Joint venture partnership develops a vision for the JV's future; establishes and implements strategies to achieve that vision. Joint venture develops and maintains strategic regional alliances, consistent with the JV's mission. Joint Venture Office provides leadership to develop, with the Management Board, a strategic implementation plan to define and achieve the goals of the partnership.	Joint Venture Office and Management Board actively look to broaden the external partnership with relevant individuals and organizations. JV maintains strong professional contacts and connections, networking to keep the JV abreast of current conservation issues, techniques, etc. Joint Venture Office identifies partner capabilities and works with partners to address any missing capabilities through additional staff, partners, contracts or training. The JV participates in development of common JV funding messages to Congress and cultivates informational relationships with its Congressional delegation and staff. One or more Management Board members regularly participate in the Association of Joint Venture Management Boards and contribute to the health and vitality of that organization.	<b>Management Board</b>	Joint Venture Office supports operations and administration of Management Board by advising and informing Board members. Management Board has broad representation within the JV geographic region (Fed, State, Non-Profit, Private) and members regularly participate in meetings. Member organizations commit energy and resources to developing a shared vision of bird conservation for the JV and coordinate their otherwise independent actions in the cooperative pursuit and refinement of that vision.	Management Board members bring significant resources to the JV partnership, engage in current issues facing the JV, share responsibilities for JV progress, follow through on commitments and responsibly use their influence for the betterment of the JV. Management Board develops and adopts a process for periodic self assessment that includes relevant goals and metrics for both programmatic and organizational performance.
			<b>Budgeting/Granting/Administration/Funding</b>	Financial management system is in place. Administrative support is available to the JV office/staff either directly or through JV partners. Mechanisms exist to receive and expend federal funding in compliance with OMB Circular A-133. Joint Venture Office keeps the Management Board fully informed on the status of the JV's operations and finances. Maintains working knowledge of pertinent funding opportunities.	Joint venture financial system is sophisticated enough to manage grant/contract funds as appropriate. Administrative personnel are on or available to JV staff. Joint venture has grant-writing capacity available in staff and or partner organizations. Joint venture develops and implements fundraising strategies for approaching and cultivating new sources of major support, including foundation and corporate grant programs, and partner contributions. Working with the Management Board, JV Office directs the preparation of annual and long-range development planning.
			<b>Technical Community</b>	Technical expertise needs are identified. Joint venture has access to technical staff either directly or through partnership.	Joint venture has science coordinator and geospatial technician on staff or available through partners as appropriate. Technical committees for specific bird conservation science needs are in place with full participation from partnership organizations. Technical committees are improving the science of the JV.
<b>Biological Planning</b>	Joint venture partnership leads a collaborative effort, often through a technical committee appointed by the Management Board, to build a biological foundation of bird conservation needs that is both based on, and informs, continental, national, or regional bird conservation initiatives	Joint venture partners seek opportunities and venues to integrate JV biological planning with relevant work of their agency/organization and with the relevant work of other agencies and organizations active within the JV area. Priority examples include state wildlife action plans, National Wildlife Refuge Comprehensive Conservation Plans, TNC Ecoregional Plans, FWS Migratory Bird Focal Species plans, and National Fish and Wildlife Foundation Keystone initiatives.	<b>Biological Planning Unit (Spatial and Temporal Scales)</b>	Biological Planning Unit defined. Identify temporal importance (breeding, staging, wintering) of JV to migratory birds. Explain and justify when planning scale deviates from bird plan conservation ecoregions.	Biological Planning Units identified at BCR or sub-BCR scales. Explicit treatment of overlapping planning units within multiple JV admin boundaries.
			<b>Priority Species</b>	A preliminary list of priority bird species or suites of species are identified and justified.	Final list of priority bird species/populations, considering all relevant FWS Birds of Management Concern. Explanation if priority species/populations deviate from priorities in latest bird plan updates.
			<b>Population Objectives</b>	Anticipated population objective variables (abundance, vital rates, etc.) identified. General description of the process that will likely be used to develop population objectives. Description of how those objectives will link to bird plans' continental objectives.	Explicit set of population objectives. Include flexible population objectives as appropriate to account for environmental or seasonal variability. Documentation of the process for deriving population objectives and identification of major sources of uncertainty.
			<b>Limiting Factors</b>	A list of potential factors thought to limit birds in planning unit.	Demographic parameters (e.g., survival rate, recruitment rate) targeted by habitat management actions.
			<b>Species/Habitat Relationships</b>	Type of population-habitat model expected to be developed that will explicitly relate population response to limiting factors (empirical, conceptual).	Explicitly stated population-habitat models. Assumptions documented as testable hypotheses.



**Desired Characteristics for Joint Venture Partnerships**

Element	Coordination/Partnerships		Sub-Element or Product	Technical Expectations	
	Minimal Content	Comprehensive Content		Minimal Content	Comprehensive Content
				Expected characteristics and level of performance for newly established and/or minimally-funded JVs (<\$300K)	JV Partnership should move toward this content as a Joint Venture matures. Increases in FWS funding are contingent on demonstrated progress toward these characteristics
<b>Conservation Design</b>	Commitment of JV partnership to develop technical capacities and planning tools for conservation design	Joint venture partnership develops and implements strategies to utilize JV science products to better target and enhance conservation programs at the regional level to benefit migratory birds. Joint venture office and/or Management Board members build strong relations with decision makers in state and federal public institutions, private industry, and partner organizations to strengthen their understanding of the joint venture's conservation activities and capabilities.	<b>Landscape/Habitat Characterization and Assessment</b>	General description of ecological setting relative to bird habitat. List of major drivers impacting bird habitat with links to assumed limiting factors and population-habitat relationships. Set of implications to bird population in the absence of partnership intervention.	A rigorous analysis of landscape/habitat carrying capacity based on explicit population-habitat models. Where possible conduct retrospective analysis of carrying capacity (e.g., prior to 1986). Where possible forecast expected carrying capacity with and without partnership intervention and predict impacts of expected major changes (e.g., urban growth, climate change).
			<b>Assessment of the Conservation Estate</b>	Preliminary summary of bird habitat (acres) protected, managed, and restored in the planning unit. This includes an assessment of all conservation lands that will benefit birds.	Thorough analysis of existing bird habitat under protection, management, or enhancement throughout the planning unit. Information should be presented by ownership, state, etc. where applicable. Assessment of the net change in the conservation landscape since the inception of the Joint Venture conducted at <5 year intervals.
			<b>Decision Support Tools</b>	Description of how the partnership might develop spatially explicit decision support models/tools to guide specific management actions suitable to overcome limiting factors. If deemed appropriate, develop a preliminary set of spatially-explicit focus areas to guide interim conservation delivery activities.	Spatially-explicit decision support tools for specific management actions suitable to overcome limiting factors. Tools distributed to partnership based on population-habitat models where appropriate. Documented analytical process and model assumptions.
			<b>Habitat Objectives</b>	General estimation of the magnitude of habitat protection, restoration, and enhancement that might be expected of the partnership.	Explicit set of habitat objectives linked to population objectives and based on population-habitat models, carrying capacity, assessment of conservation estate, and decision support models as available. Habitat objectives should be partitioned among sources of habitat (ownership, state) where appropriate.
			<b>Integration of avian decision support tools</b>	Articulate anticipated approach for integrating habitat objectives among species-groups and management treatments for priority avian species/groups.	Document process for integrating habitat objectives and spatial priorities for all priority species/groups and management treatments. Describe decision-rules for conflict resolution. Describe extent of spatial/temporal overlap in conservation activities.
<b>Habitat Delivery</b>	Joint Venture informs and influences partner organizations implementing habitat conservation programs.	Joint Venture provides a structure and process that generates, attracts, leverages, and implements habitat conservation actions in support of JV-established biological targets	<b>Program Objectives</b>	Description of how conservation programs (e.g., Farm Bill, land purchase and restoration programs, etc.) will be linked to biologically-derived bird habitat objectives.	Translate bird habitat objectives into explicit program-specific objectives (e.g., NAWCA, CRP, WRP, NWR, WMAs, etc.). If appropriate, describe ranking systems developed to inform prioritization and decision-making.
			<b>Conservation Actions</b>	General description of anticipated conservation actions, tools, and treatments the partnership expects to deliver to meet the needs of birds.	Comprehensive list and documented description of habitat conservation actions, tools, and treatments being deployed by partnership, including quantification of how specific conservation actions are expected to affect bird abundance and/or vital rates and to what degree.
			<b>Delivery Capacity</b>	Individual JV partners develop projects to deliver on-the-ground habitat conservation through existing programs	Fully developed partnership delivering on-the-ground bird conservation explicitly linked to JV biological planning/conservation design.
<b>Monitoring</b>	Joint Venture informs and influences partner organizations implementing monitoring programs.	Joint Venture provide a structure and process that generates, attracts, leverages, and implements outcome-based monitoring activities in support of JV-established biological targets	<b>Conservation Tracking System</b>	General description of anticipated need for tracking partnership activities (gross partnership accomplishments). A vision for creating that capability among partners. The JV Coordinator solicits information on accomplishments from JV partners, organizes and submits the information to appropriate managers of national databases.	Conservation tracking system in place. Explicit description of how information will be used to inform decisions (e.g., increasing performance for Program X). Explanation of linkage between tracking system and biological models so that biological accomplishments can be assessed and reported.
			<b>Habitat Inventory &amp; Monitoring Programs</b>	General description of anticipated process that will be employed to inventory and monitor landscape conditions and net habitat change over time and net progress toward habitat objectives (gains and losses).	Documentation of habitat monitoring objectives and habitat parameters that will be inventoried and monitored over time. Expected process (e.g., remote sensing) and time interval for data collection. Explicit description of how information will be used to inform decisions (e.g., refining habitat or population objectives). Assessment of the net change in Joint Venture landscape conditions conducted at <5 year intervals.
			<b>Population Monitoring Program</b>	Description of anticipated process for prioritizing and coordinating monitoring of bird population responses over time.	Documentation of demographic parameters monitored specific to each objective. Expected process (e.g., aerial surveys, nest survival) and time interval for data collection. Explicit description of how new information collected from monitoring programs will be used to inform future planning decisions (i.e., identify the feedback loop).



**Desired Characteristics for Joint Venture Partnerships**

Element	Coordination/Partnerships		Sub-Element or Product	Technical Expectations	
	Minimal Content	Comprehensive Content		Minimal Content	Comprehensive Content
				Expected characteristics and level of performance for newly established and/or minimally-funded JVs (<\$300K)	JV Partnership should move toward this content as a Joint Venture matures. Increases in FWS funding are contingent on demonstrated progress toward these characteristics
<b>Research</b>	Priority research needs are identified and distributed to JV partners and regional research institutions.	Joint Venture provides a structure and process that generates, attracts, leverages, and implements assumption-driven research activities in support of JV-established biological targets. Strong relationship with USGS and universities.	<b>Species/Habitat Model Assumptions</b>	A list of assumptions for population and habitat parameters used in models (e.g., priority species' limiting factors, predicted densities, habitat quality).	Prioritized, targeted research needed to address key uncertainties within models (prioritized based on value of better information).
			<b>Conservation Treatment Assumptions</b>	A list of assumptions inherent to the conservation actions/treatments of being implemented by JV partners.	Prioritized, targeted research needed to address key uncertainties about the impacts of conservation treatments on bird abundance/vital rates.
			<b>Sensitivity Analyses</b>	A list of key parameters most likely to influence 1) population response variables or 2) habitat objectives.	Statistical analysis of key parameters to examine their influence on population or habitat model results based on a range (e.g., confidence intervals) of assumed values (e.g., distance to edge).
			<b>Spatial Data Analyses</b>	A list of concerns relating to the limitations of current spatial databases as they may affect conservation planning.	Rigorous statistical analyses, and associated refinement, of key uncertainties related to spatial data used for planning or monitoring
<b>Communication, Education &amp; Outreach</b>	Mechanisms exist to facilitate communication between Management Board, JV office and broader JV partnership members. Appropriate JV partners or staff represent the JV to the conservation community, resource agencies, and elected officials, both regionally and nationally. The JV maintains an up-to-date website.	Develops effective communication, education, and outreach products and strategies to attract, engage and inform partners, raise awareness, change attitudes, and change behaviors among JV priority audiences to support bird habitat conservation. JV assesses various contributions partners can make to CEO, and has identified gaps in capabilities and fortified those gaps as appropriate.	<b>Priority Audiences</b>	JV has evaluated the efficacy and applicability of education and outreach to achieve its conservation objectives and has identified priority internal and external audiences and key messages.	A JV Communications Plan is guided by information from biological planning, conservation design, habitat delivery, monitoring and research to target communications geographically, programatically and to the highest priority conservation need. JV has established multiple means of communications to priority audiences such as, but not limited to: partner newsletters, public website, news releases, project tours, meetings, presentations and workshops. Each tactic has an associated evaluation plan to guide development and assess effectiveness of communications product.
			<b>Audience Objectives</b>	JV conducts basic audience objective setting to determine what are the desired levels of awareness, attitudes and changes in behaviors necessary to achieve bird habitat conservation goals and objectives of the JV.	JV correlates audience objectives with bird habitat conservation goals and objectives to determine how much and where increases in audience awareness, changes in attitudes/behaviors are necessary to help reach bird conservation objectives.
			<b>Audience Assessment</b>	JV conducts informal assessment of priority audiences to determine their baseline level of awareness, attitudes, and behaviors affecting bird conservation in the JV.	JV conducts regular, formal assessments of priority audiences to measure change in awareness, attitudes and behaviors over time. Assessments can be in the form of focus groups, surveys, interviews or other systematic means of gathering audience data. The results of which are used to revise communications products to be more effective.